



Enabler Release Definition for Push

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1. Scope

The scope of this document is limited to the Enabler Release Definition of Push according to OMA Release process and the Enabler Release specification baseline listed in section 5.

The Push enabler release defines the application level protocols, syntax and behaviours of client and server for the fulfilment of push services. Push service is defined as communication of content toward a client without an explicit request.

2. References

2.1 Normative References

| | |
|--------------|--|
| [IOPPROC] | "OMA Interoperability Policy and Process", Version 1.1, Open Mobile Alliance™, OMA-IOP-Process-V1_1, URL:http://www.openmobilealliance.org/ |
| [PPGService] | "Push Proxy Gateway Service Specification". Open Mobile Alliance™. OMA-WAP-TS-PPGService-V2_1. URL:http://www.openmobilealliance.org/ |
| [PushCO] | "Cache Operation". Open Mobile Alliance™. WAP-175-CacheOp. URL:http://www.openmobilealliance.org/ |
| [PushCO-SIN] | "Cache Operaton-Specification Information Note". Open Mobile Alliance™. WAP-175_102-CacheOp URL:http://www.openmobilealliance.org/ |
| [PushETR] | "Push 2.1 Enabler Test Requirements". Open Mobile Alliance™. OMA-ETR-Push-V2_1 URL:http://www.openmobilealliance.org/ |
| [PushOTA] | "Push OTA Protocol Specification". Open Mobile Alliance™. OMA-WAP-TS-PushOTA-V2_1. URL:http://www.openmobilealliance.org/ |
| [PushPAP] | "Push Access Protocol Specification". Open Mobile Alliance™. OMA-WAP-TS-PAP-V2_1 URL:http://www.openmobilealliance.org/ |
| [PushMsg] | "Push Message Specification". Open Mobile Alliance™. WAP-251-PushMessage URL:http://www.openmobilealliance.org/ |
| [PushSI] | "Service Indication". Open Mobile Alliance™. WAP-167-ServiceInd URL:http://www.openmobilealliance.org/ |
| [PushSI-SIN] | "Service Indication-Specification Information Note". Open Mobile Alliance™. WAP-167_103-ServiceInd URL:http://www.openmobilealliance.org/ |
| [PushSL] | "Service Load". Open Mobile Alliance™. WAP-168-ServiceLoad URL:http://www.openmobilealliance.org/ |
| [PushSL-SIN] | "Service Load-Specification Information Note". Open Mobile Alliance™. WAP-168_103-ServiceLoad URL:http://www.openmobilealliance.org/ |
| [RFC2119] | "Key words for use in RFCs to Indicate Requirement Levels", S. Bradner, March 1997, URL:http://www.ietf.org/rfc/rfc2119.txt |

2.2 Informative References

| | |
|-----------------|---|
| [BrowsingStack] | "Browser Protocol Stack V2_1", Open Mobile Alliance™. OMA-Browser_Protocol_Stack-V2_1-20050204-C URL:http://www.openmobilealliance.org/ |
| [EMN] | "Email Notification" Version 1.0. OMA-Push-EMN-V1_0, Open Mobile Alliance™. URL: http://www.openmobilealliance.org/ |
| [EMNEnabler] | "Enamber Release Definition Email Notification" Version 1.0. OMA-ERELED-EMN-V1_0, Open Mobile Alliance™. URL: http://www.openmobilealliance.org/ |
| [OMNA] | "OMA Naming Authority". Open Mobile Alliance™. URL: http://www.openmobilealliance.org/ |
| [PushArch] | "Push Architectural Overview". WAP Forum™. WAP-250-PushArchOverview URL:http://www.openmobilealliance.org/ |

3. Terminology and Conventions

3.1 Conventions

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC2119].

All sections and appendixes, except “Scope” and “Introduction”, are normative, unless they are explicitly indicated to be informative.

The formal notation convention used in sections 8 and 9 to formally express the structure and internal dependencies between specifications in the Enabler Release specification baseline is detailed in [IOPPROC].

3.2 Definitions

| | |
|--|---|
| Enabler Release | Collection of specifications that combined together form an enabler for a service area, e.g. a download enabler, a browsing enabler, a messaging enabler, a location enabler, etc. The specifications that are forming an enabler should combined fulfil a number of related market requirements. |
| Minimum Functionality Description | Description of the guaranteed features and functionality that will be enabled by implementing the minimum mandatory part of the Enabler Release |
| Push Access Protocol | A protocol used for conveying content that should be pushed to a client, and push related control information, between a Push Initiator and a Push Proxy/Gateway |
| Push Framework | The entire WAP push system. The push framework encompasses the protocols, service interfaces, and software entities that provide the means to push data to user agents in the WAP client. |
| Push Initiator | The entity that originates push content and submits it to the push framework for delivery to a user agent on a client. |
| Push OTA Protocol | A protocol used for conveying content between a Push Proxy/Gateway and a certain user agent on a client. |
| Push Proxy Gateway | A proxy gateway that provides push proxy services. |

3.3 Abbreviations

| | |
|-----------------|---|
| CO | Cache Operation |
| DTD | Document Type Definition |
| EMN | Email Notification |
| ERDEF | Enabler Requirement Definition |
| ERELD | Enabler Release Definition |
| OMA | Open Mobile Alliance |
| OMNA | OMA Naming Authority |
| OTA | Over The Air |
| OTA-HTTP | Over the Air Protocol Variant (HTTP) |
| OTA-WSP | Over the Air Protocol Variant (Wireless Session Protocol) |
| PAP | Push Access Protocol |
| PPG | Push Proxy Gateway |
| PI | Push Initiator |
| SI | Service Indication |
| SL | Service Load |

4. Introduction

This document outlines the Enabler Release Definition for Push and the respective conformance requirements for clients and servers implementing claiming compliance to it as defined by Open Mobile Alliance across the specification baseline.

A push operation in OMA is accomplished by allowing a *Push Initiator* (PI) to transmit *push content* and *delivery instructions* to a *Push Proxy Gateway* (PPG), which then delivers the push content to the WAP client (henceforth referred to as "client" or "terminal") according to the delivery instructions.

The PI is typically an application that runs on an ordinary web server. It communicates with the PPG using the *Push Access Protocol* (PAP). The PPG uses the *Push Over-The-Air* (OTA) *Protocol* to deliver the push content to the client. The protocol framework is dependent on the protocol stack defined in the Browsing Protocol Stack Enabler [BrowsingStack].

Figure 1 illustrates the push framework:

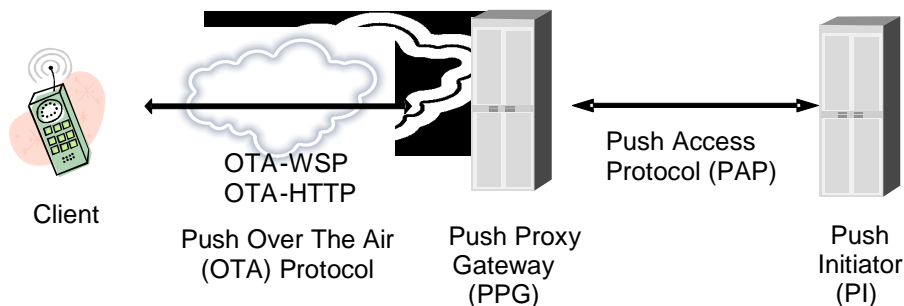


Figure 1: The Push Framework

PAP is based on standard Internet protocols; XML is used to express the delivery instructions, and the push content can be any MIME media type. These standards help make WAP Push flexible and extensible.

As mentioned, the **PPG** is responsible for delivering the push content to the client. In doing so it potentially may need to translate the client address provided by the PI into a format understood by the mobile network, transform the push content to adapt it to the client's capabilities, store the content if the client is currently unavailable, etc. The PPG does more than deliver messages. For example, it may notify the PI about the final outcome of a push submission and optionally handle cancellation, replace, or client capability requests from the PI.

The **OTA** protocol provides both connectionless and connection-oriented services. While the (mandatory) connectionless service relies upon Wireless Session Protocol (WSP), the (optional) connection-oriented service may be provided in conjunction with both WSP (OTA-WSP) and HTTP (OTA-HTTP) [using Wireless profiled HTTP (W-HTTP

The push specification suite also encompasses content types which can be pushed. These specifications define the syntax, semantics and transport optimized forms of the content types. The content types are **Service Indication** (SI), **Service Load** (SL), **Cache Operation** (CO) and **Email Notification** (EMN).

5. Enabler Release Specification Baseline

This section is normative.

The following list of specifications form the total set of specifications for Push 2.1 as defined by the OMA.

- Push Architecture [PushArch]
- Push Proxy Gateway Service [PPGService]
- Push Application Protocol (PAP) [PushPAP]
- Push Over the Air (OTA) [PushOTA]
- Push Message Specification [PushMsg]
- Push Service Indication [PushSI]
- Push Service Load [PushSL]
- Push Cache Operation [PushCO]

Email Notification [EMN] is managed under a separate enabler release, OMA Email Notification [EMNEnabler].

The following list of DTDs are also included as part of this overall enabler:

- Push Access Protocol : pap_2.1.dtd
- Service Indication DTD : si_1.0.dtd
- Service Load DTD : sl_1.0.dtd
- Cache Operation DTD: co_1.0.dtd

In addition the Enabler Test Requirements are included as part of this enabler [PushETR].

This enabler release continues on the work of the WAP Forum in the area of Push. This enabler release has been created to acknowledge changes to the push specifications which have been:

- Approved but not formally released by the WAP Forum
 - WAP 1 - Push ; understood as Push using WSP protocol services [BrowsingStack]
 - WAP 2 – Push; understood as Push using WSP or W-HTTP protocol services [BrowsingStack]
- Approved as part of the on-going maintenance of the suite of specifications.

Henceforth it was agreed that this enabler be Push 2.1, indicating it as an extension of push services previously specified and owned by the WAP Forum.

6. Minimum Functionality Description for Push

This section is informative.

The minimum functionality required for push service is divided into client and server requirements.

On the server side it is a minimum that the following is supported:

- Push Access Protocol, mandatory elements
- Push proxy gateway service mandatory service
- Service Indication content type
- Over the Air – Wireless Session Protocol Connectionless Push Service.

Connection-Orientated push, if supported on the server, must be either (or both) of the *OTA-WSP* type or the *OTA-HTTP* type as defined in [PushOTA].

On the client side it is a minimum that the following is supported:

- Service Indication content type
- Over the Air – Wireless Session Protocol Connectionless Push Service.

Connection-Orientated push, if supported on the client, must be either (or both) of the *OTA-WSP* type or the *OTA-HTTP* type as defined in [PushOTA].

7. Conformance Requirements Notation Details

This section is informative

The tables in following chapters use the following notation:

| | |
|-----------------------------|--|
| Item: | Entry in this column MUST be a valid <code>ScrItem</code> according to [IOPPROC]. |
| Feature/Application: | Entry in this column SHOULD be a short descriptive label to the Item in question. |
| Status: | Entry in this column MUST accurately reflect the architectural status of the Item in question. <ul style="list-style-type: none">• M means the Item is mandatory for the class• O means the Item is optional for the class• NA means the Item is not applicable for the class |
| Requirement: | Expression in the column MUST be a valid <code>TerminalExpression</code> according to [IOPPROC] and it MUST accurately reflect the architectural requirement of the Item in question. |

8. ERDEF for Push - Client Requirements

This section is normative.

| Item | Feature / Application | Status | Requirement |
|----------------------|-----------------------|--------|---|
| OMA-ERDEF-Push-C-001 | Push Client | M | [PushOTA]: MCF AND [PushMsg]: MCF AND [PushSI]: MCF |

Table 1 ERDEF for Push Client-side Requirements

9. ERDEF for Push - Server Requirements

This section is normative.

| Item | Feature / Application | Status | Requirement |
|----------------------|-----------------------|--------|--|
| OMA-ERDEF-Push-S-001 | Push Server | M | [PAP]:MCF AND [PPGService]:MCF AND [PushOTA]: MCF AND [PushMsg]: MCF AND [PushSI]: MCF AND |

Table 2 ERDEF for Push Server-side Requirements

Appendix A. Change History

(Informative)

A.1 Approved Version History

| Reference | Date | Description |
|---------------------------------|-------------|--|
| OMA-ERELED-Push-V2_1-20110405-A | 05 Apr 2011 | Status changed to Approved by TP TP ref # OMA-TP-2011-0098-INP_Push_V2_1_ERP_for_Final_Approval |